IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Appl. No. : 10/552,774
Applicant(s): Bernhard Gleich, et al.
Filed: October 12, 2005
TC/A.U.: 3700/3768
Examiner: Vani Gupta
Atty. Docket: DE 030117 US1
Confirmation No.: 2136
Title: ELASTOGRAPHY DEVICE AND METHOD FOR DETERMINING AND IMAGING OF MECHANICAL AND ELASTIC PARAMETERS OF AN EXAMINATION OBJECT

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Examiner's Answer mailed on January 11, 2011, Applicants provide herewith a timely filed Reply Brief.

In this Reply Brief, arguments are provided in response to the Examiner's Response to Argument presented in the Examiner's Answer (item (10), beginning on page 5 of the Examiner's Answer). Notably, wherever applicable, Applicants maintain previous arguments for patentability provided in the Appeal Brief and in responses to Office Actions.

1. The Examiner's Proffered Interpretation of the Claims is Unreasonably Broad

At page 5, the Examiner again directs Applicants to column 13, lines 15-32. The Examiner's Answer states:

> Examiner respectfully disagrees. In column 13, lines 15 – 32, where Kraus discuss means **(fig. 1)** for producing time-varying magnetic fields. More specifically, there are multiple coils surrounding a region of interest, wherein a first set of coils produce high intensity ("peak of current") magnetic fields, another set of coils produce low intensity ("minimum of the current") magnetic fields, and still a third set that produces fields in between. In effect, one already has obtained a first part area having a higher magnetic field strength and second part area having a lower magnetic field strength. Additionally, the time-varying application of currents to the coils produces "alternating fields" due to varying current at an "identical" rate but differ from each other in phase. Hence the "field rotation" the applicant refers to. However, as one of ordinary skill in the art would be aware, there is always some level of inhomogeneity occurring in nature and so there will be some level non-uniformity in of generated fields in the region of interest.

As noted in the Appeal Brief, claim 1 recites, inter alia, "*a magnetic field with a spatial profile of the magnetic field strength such that there is produced in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength.* The Examiner proffers that unintended inhomogeneous magnetic fields fall within the metes and bounds of claim 1, therefore, "there will always be some level of inhomogeneity occurring in nature and so there would be some level of non-uniformity in of generated fields in the region of interest." Applicants respectfully submit that such an interpretation is unreasonably broad in light of the filed Application.

MPEP 2111 states:

"During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." The Federal Circuit's *en banc* decision in

Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard:

"The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1).""

Applicants direct attention to paragraph [0026] of the present application, which states (with emphasis added):

"[0026] The gas bubbles deform under the influence of a displacement or a pressure wave causing minor changes in the distance between the magnetic particles at the interface between the gas bubble and the surrounding medium resulting in a different response to the external magnetic field. At a position near to the position of the field free point where the magnetic particles are close to saturation, the magnetic bubbles are very sensitive to pressure or displacement variations. These so-called magnetic bubbles are quasi wide response microphones which may be present in the examination area in a more or less uniformly distributed manner. These magnetic bubbles are particularly suitable at high oscillation frequencies, for example in the region of 50 kHz, particularly 100 kHz up to 20 MHz, and provide a very high resolution. A further advantage, particularly when using the above-described so-called magnetic bubbles, is that during the examination of the part-area having **a low magnetic field strength** there is no need for excitation by means of an external magnetic field, since the change in magnetization can already be detected by means of the oscillations, e.g. via a sound field. This applies in particular to the use of high frequency sound waves. If, for example, the gradient field at one location has a magnitude which lies close to the magnitude for reaching saturation, the oscillation of the magnetic bubbles can bring about a change in the magnetization. There is thus, in particular close to the field zero point of the gradient field, a location which reacts sensitively to fluctuations in pressure and converts these fluctuations into an external magnetic field. In measurement terms, this has the advantage that there is no strong background of the excitation frequency during detection of this magnetic field. **Instead of moving the relative position of the part-areas having a low magnetic field strength and a higher magnetic field strength with respect to one another by means of a coil or transmitter unit, in the embodiment shown only the object and the field zero point need be moved relative to one another.** In this variant of the method there is, at least to a first approximation, a deviation of the direction of the pressure of the wave field at one location."

So, with the use of magnetic bubbles, an area of low-magnetic field strength is effected and desired to eliminate the need for excitation by means of an external magnetic field since the change in magnetization can be effected by other means of oscillations. Areas of higher magnetic field strength (than the areas of low-magnetic field strength) are purposely effected. The providing of an examination area comprising a first part-area having a low magnetic field strength, is effected as a means to an desired end. There is no disclosure that one possible means of generation of the area of low magnetic field strength and an area of higher magnetic field strength is reliance on inhomogeneous fields naturally occurring. Applicants respectfully submit that the proffered interpretation of claim 1 that naturally occurring ebbs and flows of magnetic field flux are sufficient means of producing *a magnetic field with a spatial profile of the magnetic field strength such that there is produced in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength* is entirely unreasonably broad in view of the specification as filed.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:

Phillips Electronics North America Corp.

___/William S. Francos/_____

by: William S. Francos (Reg. No. 38,456)

Date: March 11, 2011

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